



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/529,391	06/06/2000	JEFFREY S. HAGGARD	0818.0014C	7035

7590 07/14/2004

PATRICK J FINNAN  
EPSTEIN EDELL & RETZER  
1901 RESEARCH BOULEVARD  
SUITE 400  
ROCKVILLE, MD 20850

EXAMINER

YAO, SAMCHUAN CUA

ART UNIT PAPER NUMBER

1733

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/529,391

Applicant(s)

HAGGARD ET AL.

Examiner

Sam Chuan C. Yao

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2004.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,6-21 and 136 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1,2,6-14,16-21 and 136 is/are rejected.  
7) ☒ Claim(s) 15 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 136 is rejected under 35 U.S.C. 103(a) as being unpatentable over the current state of the art as evidence from anyone of (JP 2-182962, JP 5-140849, and Marmon et al (US 6,200,669)) in view of Mizoe et al (US 5, ,926), Kurata et al (US 3,928,958) and (Mathes et al (US 4,369,156) for reasons of record set forth on 02-26-04 numbered paragraph 2.

3. Claim 136 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mizoe et al (US 5,790,926) in view of the current state of the art as evidence from anyone of (JP 2-182962, JP 5-140849, and Marmon et al (US 6,200,669) and further in view of Kurata et al (US 3,928,958) and (Mathes et al (US 4,369,156) for reasons of record set forth on 02-26-04 numbered paragraph 3.

4. Claims 1-2, 6-14, and 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references set forth in numbered paragraph 2 or 3 above as applied to claim 136 above, and further in view of Ishiyama et al (US 6,063,717) or Radwanski et al (US 4,931,355) for reasons of record set forth on 02-26-04 numbered paragraph 4.

***Allowable Subject Matter***

5. Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: none of the references taken teaches using the particular components recited claim 15.

***Response to Arguments***

6. Applicant's arguments filed on 06-24-04 have been fully considered but they are not persuasive.

On page 8 last paragraph to page 9 line 5, Counsel argues “... *if heat treatment could be readily substituted with in-line hydroentangling, as the Examiner asserts, it would seem likely there would be a host of prior art documents in existence which show that which the Examiner believes is obvious.*”. First of all, simply because a host of prior art documents is not found or used by examiner, it does not necessarily mean the absence/non-existence of such prior art document(s). More importantly, this does not change the fact that, the teachings of Mizoe et al as a whole would have reasonably suggested to one in the art that hydroentangling operation and heat-treatment operation are an effective method for splitting multi-components splittable fibers in a fiber web.

On page 9 first paragraph, Counsel argues that “... *the claimed invention is not a matter of simply applying heat to a multicomponent fiber to achieve effective*

*splitting of the fiber in an in-line context. Rather, the process involves the careful selection of different materials that have sufficient relative differences in heat shrinkage, preferably at least about 10 percent, to ensure that fibers will sufficiently split when moving and being subjected to heat at suitable in-line operating speeds."* Is Counsel suggesting that, one in the art wanting to practice a heat-treatment operation taught by Mizoe et al would not have selected materials for multi-component fibers which have relatively large difference in thermal shrinkage? In other words, is Counsel's suggesting that one in the art wanting to practice a thermal treatment operation taught by Mizoe et al would have selected materials with a substantially similar thermal shrinkage? It is quite clear that, in order to effectively split multi-component fibers by thermal treatment operation, it is imperative for one in the art to select materials for multi-components fibers, where the difference in their respective thermal shrinkage is relatively large. Moreover, as noted in the prior office action, it is old in the art to form multi-components fibers, where the difference in thermal shrinkage in the components of the fibers is as large as 40% as exemplified in the teachings of Kurata et al. For these reasons, it would have been obvious in the art, motivated by the desire to effectively split multi-components fibers by thermal treatment, to select materials *that have sufficient relative differences in heat shrinkage"*. For example, selecting materials where a difference in thermal shrinkage is significantly greater than 10%.

NOTE: As for Counsel's repeated arguments that, Mizoe et al does not teach splitting multi-component fibers in-line, Examiner agrees. However, an obviousness question cannot be approached on the basis that an artisan having ordinary skill would have known only what they read in references, because such artisan must be presumed to know something about the art apart from what the references disclose. See *In re Jacoby*, 309 F.2d 513, 135 USPQ 317 (CCPA). In the present case, one in the art (motivated by a desire to replace an in-line splitting of multi-component fibers using hydro-entangling operation with a thermal treatment to obviate the need to recover large amount of water and to obviate the need for drying) would have simply chosen materials for multi-component fibers where the difference in their respective thermal shrinkage is sufficiently large to accommodate for a desired in-line processing speed. On page 9 second paragraph, Counsel argues "*... there is no reasonable combination ... that would reasonably suggest to one having ordinary skill in the art to substitute an in-line hydroentangling processing step with an in-line heat-treatment step so as to effect splitting of multicomponent fibers. This is because hydroentangling is a different process and yields a different product in comparison to mere heat treatment.*". Examiner agrees with Counsel that, "*hydroentangling is a different process and yields a different product in comparison to mere heat treatment*". However, simply because a hydroentangling operation and a thermal treatment operation yield articles with different characteristics, it does not necessarily mean that, it teaches away from

interchangeably using these two fiber splitting operations as evidence from the teachings of Mizoe et al. In other words, if Counsel's argument holds true, then Mizoe et al would not have suggested to interchangeably apply these two fiber splitting operations to form ultra-fine fibers from multi-component fibers. To put simply, for manufacturing operations such as the one taught by Mizoe et al where an overall intended purpose of the operations is to form a web comprising ultra-fine fibers, it would have been obvious in the art to interchangeably use either hydro-entangling operation or a heat-treatment operation in-line to split multi-component fibers in a web. It is worth noting that, Mizoe et al also teaches forming ultra-fine fibers (for a buffed fabric) by a chemical removing/etching operation. It is quite clear that, the resultant characteristics of a web comprising ultra-fine fibers would be different, when web is formed by chemical removing/etching operation (etching fibers), heat-treatment operation, hydroentangling operation, or needling operation.

As for a 1.132 declaration submitted by Dr. Hagewood, as noted above, Examiner agrees with Dr. Hagewood that the characteristics of a resultant web which is subjected to a hydroentangling operation would be different from the one which is subjected to a heat-treatment operation. However, Examiner strongly disagrees with Counsel's assertion that, one in the art would not be motivated to interchangeably use either hydro-entangling operation or heat-treatment operation to split multi-component fibers. As noted above, for a manufacturing operation such as a process taught by Mizoe et al, where an overall intended

objective is to form a web comprising ultra-fine fibers, one in the art would have interchangeably use hydroentangling or heat-treatment operation. However, an incentive for one in the art to use a heat-treatment operation would have simply been to obtain a self-evident advantage of obviating the need to handle large quantity of water and obviate the need to dry a hydro-entangled web. Moreover, correctly noted by Dr. Hagewood, "... *only two techniques are both fast enough and economically feasible to be utilized in an in-line spunbond process to split fibers into two or more components.*"

As for Counsel's argument on page 10 last paragraph to page 11 line 2 regarding Marmon et al and two Japanese patents, it should be emphasized that, the rejection is not based on making articles in a process taught by either Marmon et al, Japan '962, or Japan '849. These references are merely cited to show that the current state of the art effectively forms in-line a web comprising ultra-fine fibers by subjecting a web to a hydro-entangling operation.

### **Conclusion**

7. This is a RCE application. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application.

Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case.

See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Chuan C. Yao whose telephone number is (571) 272-1224. The examiner can normally be reached on Monday-Friday with second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1733

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sam Chuan C. Yao  
Primary Examiner  
Art Unit 1733

Scy  
07-08-04